



July 31, 2015

Chairman Susan Bitter Smith  
Commissioner Bob Stump  
Commissioner Bob Burns  
Commissioner Doug Little  
Commissioner Tom Forese

Arizona Corporation Commission

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AZ CORP COMMISSION  
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**In the Matter of the Application of Tucson Electric Power Company for Approval of its 2016 Energy Efficiency Implementation Plan and Waiver, Docket No. E-01933A-15-0178**

Dear Commissioner Burns:

Tucson Electric Power Company ("TEP") and UNS Electric, Inc. ("UNS Electric") (jointly "Companies"), hereby submit their joint response to your July 9, 2015 letter.

The Companies appreciate the opportunity to respond to your questions regarding technologies and strategies with respect to the Companies' 2016 Energy Efficiency Implementation Plans ("EE Plans").<sup>1</sup> The Companies' response to each question below primarily reflects TEP's EE programs as TEP leverages its economy of scale and more robust customer base to gauge market adoption and cost effectiveness before further deploying new programs and technologies.

1. *"Whether or not it currently implements the specific technologies and strategies discussed during the workshops as part of its existing DSM portfolio."*

TEP utilizes the following technologies and strategies in its DSM portfolio.

**Combined Heat and Power ("CHP")**

TEP's CHP program was approved by the Commission in Decision No. 74885 (December 31, 2014). A Conservation Voltage Reduction ("CVR") program was also approved in the same Decision, but without any cost recovery through the DSM surcharge. The CVR program correlates to what Commissioner Burns refers to as

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<sup>1</sup> UNS Electric did not file a 2016 EE Plan as its 2015 EE Plan (filed June 2, 2015, Docket No. E-04204A-14-0178) is pending Commission approval. Pursuant to discussions between UNS Electric and Commission Staff, UNS Electric filed a notice on June 1, 2015 requesting that the Commission consider the 2015 EE Plan as UNS Electric's 2016 EE Plan.

“distribution voltage optimization.” It is not specifically a commercial program, but affects all customers.

### **Commercial and Industrial Demand Response (“DR”)**

TEP has offered a Commercial and Industrial DR Program since 2010. This program was approved by the Commission in Decision No. 71787 (July 12, 2010). This program is technology based and does not include any behavioral approach. While not specifically an “integrated energy efficiency and demand response program,” participants in the demand response program are aware of the other commercial energy efficiency (“EE”) programs available to them and all the commercial programs are marketed together. UNS Electric offers a similar program which was approved in Decision No. 72747 (January 20, 2012).

### **Residential DR**

TEP’s Residential DR program (including behavioral approaches) was approved in Decision No. 71846 (August 25, 2010). The program was a two-year pilot project initiated with matching funding from a Department of Energy Smart Grid grant. The goal of the pilot was to confirm the feasibility and effectiveness of direct load control during peak hours as a cost-effective means to reduce peak system load, and engage behavioral efficiency through the use of Home Energy Management displays, thermostats and web portals. The program launched in June 2011 and concluded in November of 2013 at the close of the grant funding cycle. TEP did not extend the program because the equipment manufacturer was in the process of exiting the load control market. The program did see participants reduce their energy use by an average of 2.3% and reduce their demand by an average of 2.25 kW per participant

### **Residential Bill Comparison**

A Residential Bill Comparison (Home Energy Reports) pilot program was approved by the Commission in Decision No. 72254 (April 7, 2011). The program was designed to affect certain behaviors such as: (1) turning off the lights or adjusting the thermostat; (2) changing furnace filters and cleaning refrigerator coils; and (3) purchasing efficient light bulbs and appliances, as well as participating in other DSM programs. Customers were regularly mailed Home Energy Reports comparing their energy consumption to that of other customers nearby. The program also offered a customer portal for exploring and customizing EE tips and recommendations.

TEP launched the bill comparison program in October 2011 and reached a peak outreach of approximately 36,000 customers. The program was found to be not cost effective for UNS Electric. Without the economies of scale of offering the program to both UNS Electric and TEP, TEP elected to discontinue Home Energy Reports in 2014.

TEP is in the process of transferring the home energy program data to a new vendor offering web access tools and analytics. These new tools will be available to residential and small commercial customers on TEP's website this year.

### **Other Behavioral Programs**

TEP offers two other Behavioral EE Programs: delivering K-12 classroom presentations with take-home residential EE kits (approved in Decision No. 70402, July 3, 2008); and holding community EE workshops to inform customers about energy savings tips, simple weatherization improvements, and dispelling common EE myths.

2. *"Whether or not it considered the new technologies, and if so, whether or not it included any of them as part of its 2016 plan, with a summary of how they were included."*

TEP included the following programs and strategies in its 2016 EE Plan.

### **Commercial Programs**

TEP's 2016 EE Plan (filed June 1, 2015, Docket No. E-01933A-15-1078) requests the continuation of the existing Commercial and Industrial ("C&I") Direct Load Control Program and the CVR Program. The 2016 Plan also requests approval of an Energy Intelligence Software ("EIS") prescriptive measure as part of the C&I Comprehensive Program.

### **Residential Programs**

TEP's DSM and Customer Solutions staff constantly reviews various EE technologies as they administer existing programs, solicit bids for services, research measures for inclusion in future DSM implementation plans, attend conferences and exchange best practices with peer utilities.

Perhaps the most important residential trend we have been following is the emergence of customer EE engagement opportunities involving smart thermostats. Unlike programmable thermostats, today's smart thermostats run sophisticated analytics that monitor occupancy and building shell performance. Smart thermostats also can be programmed to achieve additional energy savings without compromising comfort. Smart thermostats typically interface with a cloud-based hub that can be the gateway for additional engagement and functionality including behavioral EE messaging, DR, customer facing energy analytics. TEP's residential DR program piloted an early precursor to these systems and TEP has been monitoring progress in the field. TEP's 2016 EE Plan includes a smart thermostat incentive as the first step in promoting the energy saving potential of a connected home that one day may include appliance efficiency monitoring, energy management optimizing, DER integration, EV charging medical monitoring and many other benefits that will come to market over the next decade.

3. *"If they were not included as part of its 2016 plan, an explanation of why they were excluded. In responding to this request, the utility should explain whether it evaluated these new opportunities for cost-effectiveness and energy savings potential or not, and provide a copy of such analysis."*

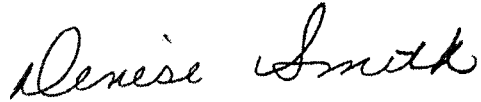
The Companies' Commission-approved programs and measures, plus new measures requested in the Companies' pending EE Plans, will enable the Companies to take the next steps in bringing new EE technologies to our customers. For example, with the approval of a smart thermostat incentive, TEP will be able to bring three years of research and data to the request for proposal process and secure a mature smart thermostat technology capable of one or more of the benefits mentioned above.

4. *"Information on any other new DSM technologies or strategies that the utility considered in the preparation of its 2016 plan, including any analyses of the cost-effectiveness and savings potential of other new technologies or strategies (if these are not already included in the utility's 2016 plan filing)."*

The Companies' research and analysis efforts focused on the programs, technologies and strategies described above due to their potential for delivering the most cost effective EE savings to our customers. Also, as described in #2 above, the Companies continuously research new EE technologies for potential inclusion in future EE plans.

The Companies would be happy to discuss these responses with you.

Respectfully submitted this 31<sup>st</sup> day of July 2015,



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